

## CLAIMS (29873)

What is claimed is:

1. A method of interpolation for a complementary-color-filtered array image, comprising the steps of:

(a) provide a complementary-color-filtered array of pixel values with yellow pixel values  $Y_e$  on a first subarray, cyan pixel values  $C_y$  on a second subarray, magenta pixel values  $M_g$  on a third subarray, and green pixel values  $G$  on a fourth subarray;

(b) interpolating the subarray of yellow pixel values to form a yellow array;

(c) interpolating the subarray of cyan pixel values to form a cyan array;

(d) interpolating the subarray of magenta pixel values to form a magenta array;

(e) interpolating the subarray of green pixel values to form a green array;

(f) adjusting the color values for each pixel by

(i) subtracting a quantity  $(Y_e + C_y - 2 \cdot G - M_g)/4$  from  $Y_e$  to generate the pixel's adjusted yellow value where  $Y_e$  is the pixel's yellow value from step (b),  $C_y$  is the pixel's cyan value from step (c),  $M_g$  is the pixel's magenta value from step (d), and  $G$  is the pixel's green value from step (e);

(ii) subtracting the quantity  $(Y_e + C_y - 2 \cdot G - M_g)/4$  from  $C_y$  to generate the pixel's adjusted cyan value;

(iii) adding the quantity  $(Y_e + C_y - 2 \cdot G - M_g)/4$  to  $M_g$  to generate the pixel's adjusted magenta value; and

(iv) adding the quantity  $(Y_e + C_y - 2 \cdot G - M_g)/8$  to  $G$  to generate the pixel's adjusted green value.

2. A method of interpolated complementary-color-filtered array image processing, comprising the steps of:

(a) provide an interpolated complementary-color-filtered array of pixel values with a pixel's yellow value denoted  $Y_e$ , cyan value denoted  $C_y$ , magenta value denoted  $M_g$ , and green value denoted  $G$ ;

(b) adjusting the color values for each pixel by

(i) subtracting a quantity  $(Y_e + C_y - 2 \cdot G - M_g)/4$  from  $Y_e$  to generate the pixel's adjusted yellow value;

(ii) subtracting the quantity  $(Y_e + C_y - 2 \cdot G - M_g)/4$  from  $C_y$  to generate the pixel's adjusted cyan value;

(iii) adding the quantity  $(Y_e + C_y - 2 \cdot G - M_g)/4$  to  $M_g$  to generate the pixel's adjusted magenta value; and

(iv) adding the quantity  $(Y_e + C_y - 2 \cdot G - M_g)/8$  to  $G$  to generate the pixel's adjusted green value.

3. An interpolator for complementary-color-filtered array image, comprising

(a) an interpolator for the color subarrays of a complementary-color-filtered array;

(b) a filter coupled to the output of the interpolator to adjust the interpolated colors at each pixel by adjusting with an imbalance factor for the pixel.